

MAKING MATHEMATICS RELEVANT IN AN URBAN CONTEXT

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Making Mathematics Relevant in Brooklyn

This research is situated in New York City, whose school system is the largest in the U.S.A. Within a climate of high stakes testing, mathematics teacher shortages, and an unacceptably low graduation rate, the call for “mathematics for all” is especially serious. In addition, New York City is an exemplary model of urban-ness in terms of its linguistic, cultural, ethnic, and racial diversity alongside other urban factors like, say, high population density or paucity of resources. How should we be preparing and training mathematics teachers to teach in urban contexts? In addition to the requisite subject matter and pedagogical content knowledge (Shulman, 1986), a third dimension, that of equity pedagogy (Banks and Banks, 1995), is crucial. We opt to utilize Ladson-Billings’s (1995) specific construct of culturally relevant pedagogy (CRP) as our foundation, with its three attributes: it i) emphasizes students’ academic success, ii) encourages the development of cultural competence, and iii) facilitates development of critical consciousness.

There is a powerful set of examples in the literature of teaching culturally relevant mathematics (e.g., Gutstein, 2006; Skovsmose, 1994; Vithal, 2003). These studies provide important existence proofs, typically taking place in individual classrooms in which the researcher acted as a teacher or as a co-teacher. In most cases, these projects employ a research model whereby the investigation and determination of students’ out-of-school activities and interests are conducted by university researchers. However, the local and temporal bounds of cultural and social relevance prompt a critical question as to how teachers might learn to identify what is relevant or meaningful with respect to their own students. The literature does not provide us with answers to this question and it is this opening that forms the basis of our work.

This particular project is organized around the following research questions. The first is, how can urban mathematics teachers learn to teach mathematics with a culturally relevant approach? The second research question is, what are the complexities inherent in teacher learning about CRP when students come from a variety of cultural and/or linguistic backgrounds, all of which may differ from the teacher’s background? Finally, the third research question is, how does a structure of a professional community of learners, organized around the goal of learning to teach mathematics with a CR approach in cities, contribute to teacher learning? The poster will describe the collaborative project, trace several teacher learning trajectories, and identify a set of emergent questions and tensions.

References

- Banks, C.A. and Banks, J.A. (1995). Equity pedagogy: an essential component of multicultural education. *Theory into Practice*, 34(3), 152-158.
- Gutstein, Eric. (2006). *Reading and writing the world with mathematics*. New York: Routledge.
- Ladson-Billings, Gloria. (1995). Toward a theory of culturally relevant pedagogy. *American Educational Research Journal* 32(3), 465-491.
- Shulman, Lee. (1986). Those who understand: knowledge growth in teaching. *Educational Researcher* 15(2), 4-14.

- Skovsmose, Ole. (1994). *Towards a philosophy of critical mathematics education*. Dordrecht: Kluwer.
- Vithal, R. (2003). *In search of a pedagogy of conflict and dialogue for mathematics education*. Dordrecht: Kluwer.